

## **REMARKS**

Claims 1 through 17 are pending in the present application. Applicants propose adding claim 18

Claim 14 stands rejected under 35 U.S.C. § 112, second paragraph

Claim 17 stands rejected under 35 U.S.C. § 112, first paragraph.

Claims 1 through 17 stand rejected under 35 U.S.C. § 103(a).

Reconsideration is respectfully requested in view of the following remarks.

### ***Rejection Under 35 U.S.C. § 112, Second Paragraph***

Claim 14 stands rejected under 35 U.S.C. § 112, second paragraph, for allegedly being indefinite for referring to “scenarios/states”. Applicants respectfully submit that proposed amendment to claim 14 addresses the Office’s objection.

Reconsideration and withdrawal of the rejection under 35 U.S.C. § 112, second paragraph, is respectfully requested.

### ***Rejection Under 35 U.S.C. § 112, First Paragraph***

Claim 17 stands rejected under 35 U.S.C. § 112, first paragraph, for allegedly failing to describe the claimed subject matter “in such a way to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.” More particularly, the Office alleges that “[t]he limitation of the numerical equation is not found in the specification.” The Office also alleges that with respect to “future date” and “future financial event,” there is “no support in the specification.” (Office Action at p. 4).

Regarding support for “numerical equation,” Applicants respectfully refer the Office to Figures 6-8 and paragraphs [0063] through [0078] of the published application, which clearly provide an example of “receiving at the computing system via the first user interface . . . at least one numerical equation that is employed in determining a future value of a financial flow.”

[0063]An example of implementing the mechanisms making it possible to identify and describe a financial product by its contextual data and its characteristic data as indicated at

10 and 12, in order to construct Table T1 in FIG. 2, will now be described in greater detail with reference to FIGS. 6 to 8, which represent acquisition windows of the product to be described.

[0064]These mechanisms make it possible to describe any structured financial product, independently of its underlying instrument or the structure or characteristics of its flows. These mechanisms have:

[0065]a syntax defining the type of phrase structure accepted and compressed;

[0066]a dictionary of predefined words that are "compressed";

[0067]the capacity to accept new words if they are suitably defined and introduced.

[0068]In the example that follows, a convertible bond will be defined. First, the market variables in question, that is, the currency and its "rate" curve and the pertinent "transferable security", in this case the DAX, are introduced into the windows 30 and 31 of FIG. 6.

[0069]It is necessary to describe the sum that the bond will pay at maturity if it is not converted. For this purpose, the term "Redempt" is introduced at 32, to designate the amount paid back at maturity. A numerical value is assigned to it at 33, in this case 100.

**[0070]Likewise, "Coupon" and "ConvPrice" are introduced at 34 and 35, and their respective numerical values at 36 and 37.**

**[0071]In order to suitably define the product, the idea of "conversion ratio" must be introduced. This is done at 38 by indicating that "Conv\_Ratio(x)" is equal to "100\*(x)/ConvPrice" (window 39).**

[0072]Then we must describe the product, that is, the flows that it will generate and the conditions of this generation if necessary.

[0073]In the hypothesis in question, the convertible bond pays a coupon (window (43) from any point of departure

(window 40), at an annual frequency (window 42) for five years (window 41).

[0074]At the end of five years (window 44), the bond pays its redemption value (window 45).

**[0075]The bond's conversion characteristic is expressed by the fact that at any time ("Od", window 46) during the five years (window 47), the value of the product is the maximum of the product value and its conversion ratio (window 48):**

**Convert=max(convert,Conv\_Ratio(dax)).**

[0076]These mechanisms also make it possible to very simply describe a convertible bond with particularly unusual characteristics.

[0077]Thanks to the interface means, shown in FIG. 7, the system according to the invention generates and can then display the product flows based on the data introduced in the form of a preestablished format. This allows the user to make sure that the discounted flows are properly represented and captured by the system.

[0078]Finally, the data processing means make it possible for the system to generate a script (FIG. 8), that is, a code precisely describing the product characteristics and containing all the information necessary for pricing the product. The script, show in FIG. 8, can be exchanged among all the intervening parties to describe and price the product.

Applicants respectfully submit that the patent application specification, including Figures 6-8 and paragraphs [0063]-[0068], "contain a written description" of the subject matter of claim 17 including a "numerical equation."

With respect to the Office's allegation that there is "no support in the specification" for "future date" and "future financial event," Applicants respectfully direct the Office to Figures 1-4 and 7 and paragraphs [0054] through [0062] of the published application:

[0054]Since the market variables at this stage are identified and Table T4 is constructed, construction of the evaluation trees of Table T2 is therefore achieved.

[0055]On the basis of the data obtained as described with reference to FIG. 2, the "pricer" 1 proceeds to calculate the price by applying one of the numerical resolution methods 5.

[0056]These financial numerical resolution methods (for example, trees 6, integration 7, partial differential equations or PDE 8, the Monte Carlo method 9, etc.), which are standard and well known to finance specialists, achieve the following:

[0057]simulate or explore possible values of market variables;

**[0058]calculate the desired or future value of product variables.**

[0059]The functional block diagram in FIG. 3 illustrates the numerical resolution of the product pricing problem. At 20, depending on the numerical resolution method 5 in question, acquisition of the contextual data used in the method (which have been obtained as described with reference to FIG. 2) and of the number of product variables is carried out.

**[0060]At 21, numerical resolution means generate the values of the market variables at each date D1, D2 . . . Dn of the schedule according to the market hypotheses in question, as well as at each scenario established as a function of these hypotheses.** As shown in FIG. 4, a table of market variable values Tvvm corresponds to each date and market scenario/state.

[0061]At 22, the numerical resolution means calculate the product variable values for each date and market scenario/state in question. As shown in FIG. 5, a table of product variable values Tvp corresponds to each date and market scenario/state in question.

[0062]At 23, the numerical resolution means finally produces a product price as a function of the set of calculated product variable values.

Further, in the example of Figure 7, the depicted "schedule" comprises dates ranging from 2002 **through 2007**. Applicants respectfully note that the present application has a foreign priority filing date of 2002, which is years prior to a plurality of dates in the illustrative

“schedule” of Figure 7. Thus, in the exemplary embodiment of Figure 7, **the displayed schedule of financial flows are for “future” dates.**

Reconsideration and withdrawal of the rejections under 35 U.S.C. § 112, first paragraph is respectfully requested.

***Rejection Under 35 U.S.C. § 103(a)***

Claims 1 through 16 stand rejected under 35 U.S.C. § 103(a) as allegedly being rendered obvious over U.S. patent number 7,418,418 (hereinafter “Wizon”) in view of U.S. patent number 7,467,108 (hereinafter “Papka”). Reconsideration is respectfully requested.

Amended claim 9 recites:

A method implemented on a computing system for pricing a financial product, comprising:  
transmitting for display a first user interface;  
receiving into the computing system via the first user interface data that identify and describe the product, the data comprising: contextual data of the product, the contextual data indicating market variables involved in product pricing and used for selecting a market hypothesis for pricing the product, the contextual data comprising at least one valuation currency and at least one underlying instrument; and characteristic data of the product comprising a plurality of future financial flows associated with the product, the plurality of future financial flows defined using at least one numerical equation;  
**in the computing system generating a planned schedule from the data that identify and describe the product, the planned schedule comprising for each of a plurality of future dates a financial flow associated with the product and defined using at least in part the at least one numerical equation;**  
**transmitting for display a second user interface, the second user interface comprising a listing of dates and for each date a financial flow associated with the product and defined using at least in part the at least one numerical equation;**  
**in the computing system interpreting the schedule, in order to identify product variables for the product on the basis of at least one of the plurality of future financial flows, and for each date of the planned schedule, a function for calculating a price associated with the product as a function of at least one of the product variables;**

**in the computing system receiving market variables associated with the product and generated by a market analysis, the market variables identified for each of the plurality of dates on the schedule; and**

**in the computing system calculating using the market variables, for each of a plurality of market scenarios and for each of the plurality of dates on the schedule, product variable values; and**

**in the computing system calculating a product price as a function of the calculated product variable values.**

In order for a set of references to render claim 9 obvious, the references must disclose each and every element of the recited claim and disclose arranging the recited elements to form the recited combination. Applicant respectfully submits that Wizon and Papka do not disclose or suggest at least the above-emphasized claim language and therefore cannot possibly teach the recited combination.

*Wizon* discloses a computer-based system for pricing fixed income securities. In the system disclosed by Wizon, users select a portfolio of fixed income securities from a portfolio database and then select a pricing method for pricing one of the fixed income securities in the selected portfolio. (Abstract). Wizon discloses calculating the price of the selected fixed income security based upon the designated pricing method. (Abstract).

Thus, in Wizon, a user selects a pricing model for a selected fixed income security and the system calculates the price. But, the Office has acknowledged that Wizon does not disclose or suggest language similar to the following amended claim language:

**generating a planned schedule from the data that identify and describe the product, the planned schedule comprising for each of a plurality of future dates a financial flow associated with the product and defined using at least in part the at least one numerical equation;**

. . .

**in the computing system interpreting the schedule, in order to identify the product on the basis of at least one of the plurality of future financial flows, and for each date of the planned schedule, a function for calculating a price associated with the product as a function of at least one of the product variables.**

Applicant respectfully submits that if Wizon does not disclose the above claim language, it cannot possibly disclose:

in the computing system **receiving market variables associated with the product and generated by a market analysis, the market variables identified for each of the plurality of dates on the schedule; and**

in the computing system **calculating using the market variables, for each of a plurality of market scenarios and for each of the plurality of dates on the schedule, product variable values.**

Applicants further note that Wizon does not disclose:

**transmitting for display a second user interface, the second user interface comprising a listing of dates and for each date a financial flow associated with the product and defined using at least in part the at least one numerical equation.**

The Office has alleged that Wizon at column 1, lines 33-35 and column 3, lines 1-9 is relevant. Applicants respectfully disagree. Column 1, lines 33-35 disclose programming a processor with a formula. Column 3, lines 1-9 discloses that a pricing system controls a graphical user interface. But neither of the referenced sections disclose "**a second user interface, the second user interface comprising a listing of dates and for each date a financial flow associated with the product and defined using at least in part the at least one numerical equation.**" Rather, Wizon discloses a single user interface depicted in Figure 2 of Wizon. The single user interface does not "**compris[e] a listing of dates and for each date a financial flow associated with the product and defined using at least in part the at least one numerical equation.**"

*Papka* does not address the deficiencies of Wizon. Papka discloses a method of creating a price prediction model that forecasts short-term price fluctuations in financial instruments by collecting, analyzing and classifying financial news for a financial instrument into categories. (Abstract). According to Papka, financial analysts review textual financial documents obtained from public interest web sites and classify the documents to be either "good news" or "bad news" relative to the expected performance of a financial instrument. (Col. 2, ll. 32-45). Distributions of **historical** price changes for a particular financial instrument are sampled from the data based on the occurrences of the different classifications

of news. (Col. 2, ll. 32-45) (Col. 3, ll. 60-62). The distributions are used to form a model that produces buy, sell, and no-trade signals for the financial instrument. (Col. 2, ll. 32-45) (Col. 3, ln. 60 – Col. 5, ln. 35). The model is then used to predict when to buy, sell or not trade the stock given the daily occurrences of the underlying company's financial news. (Col. 2, ll. 32-45) (Col. 5, ll. 35-55).

Thus, Papka discloses a method wherein classifications of **past** news stories are correlated with the corresponding **historical** price values for a stock to create a model for whether a stock value will fall or rise in response to a particular type of news story. In contrast with claim 1, Papka does not disclose or suggest “**generating a planned schedule from the data that identify and describe the product, the planned schedule comprising for each of a plurality of future dates a financial flow associated with the product and defined using at least in part the at least one numerical equation.**” Rather, Papka discloses using **past** new articles to generate a price prediction model. But past news articles are not a “**planned schedule**.” Furthermore, past news articles are not “**a planned schedule from the data that identify and describe the product.**” Still further, past news articles are not a “**planned schedule comprising for each of a plurality of future dates a financial flow associated with the product and defined using at least in part the at least one numerical equation.**”

Likewise, Papka does not disclose “**interpreting the schedule, in order to identify product variables for the product on the basis of at least one of the plurality of future financial flows, and for each date of the planned schedule, a function for calculating a price associated with the product as a function of at least one of the product variables.**” As noted above, Papka does not disclose “**generating a planned schedule.**” Therefore, Papka cannot possibly disclose “**interpreting the schedule.**” Furthermore, Papka does not disclose or suggest “**generat[ing] . . . a table of variables for the product.**” Indeed, Papka nowhere even uses the word “table.” Still further, Papka does not disclose or suggest “**generat[ing] . . . for each future date of a planned schedule, a function for calculating a price associated with the product as a function of at least one of the product variables.**” Rather, Papka discloses generating a price prediction model that produces a buy, sell, and no-trade signal. But the model disclosed by Papka is not “**for each future date of a planned schedule.**” Furthermore, the model disclosed by Papka does not generate “**a function for calculating the**

**price associated with the product as a function of at least one of the product variables.”**  
Rather, Papka discloses a model for generating a “buy, sell, and no-trade signal[]” (Col. 5, ll. 24-25).

The Office cites to column 2, lines 25-46 as allegedly relevant to “future financial events [and] generating a planned schedule.” Admittedly, and as discussed above, Papka discloses that “[t]he model may be used to predict when to buy, sell, or not trade the stock given the daily occurrences of the underlying company’s financial news.” But, the model disclosed by Papka does not contain a **“planned schedule comprising for each of a plurality of future dates a financial flow associated with the product and defined using at least in part the at least one numerical equation.”** Indeed, Papka does not disclose a “schedule” at all and certainly not a “planned schedule comprising **for each of a plurality of future dates a financial flow associated with the product.”** A prediction as to whether a stock price will rise or fall as disclosed by Papka, is not a **“planned schedule comprising for each of a plurality of future dates a financial flow . . . defined using at least in part the at least one numerical equation.”** Indeed, a prediction that a stock price may rise or fall is not a financial flow at all. Certainly, a prediction as to whether a stock price will rise or fall is not a “planned schedule comprising for each of a plurality of future dates a **financial flow . . . defined using at least in part the at least one numerical equation.”**

Therefore, because neither Wizon nor Papka disclose or suggest at least the above-emphasized claim language, it cannot possibly disclose or suggest the combination recited in claim 9. Accordingly claim 9 and the claims depending therefrom are not rendered obvious. Although the language of claims 1 and 17 is different from that of claim 9, for reasons similar to those discussed above, claims 1 and 17 are not rendered obvious.

Applicants note that claim 17 further distinguishes from the cited references for additional reasons. Applicants respectfully submit that the cited references do not disclose or suggest at least the following emphasized claim language:

A method implemented on a computing system for pricing a financial product, comprising:  
displaying a first user interface on the computing system, the first user interface adapted to receive data that identify and describe the product, the data comprising:  
contextual data of the product, the contextual data indicating

market variables involved in product pricing and used for selecting a market hypothesis for pricing the product, the contextual data comprising at least one valuation currency and at least one underlying instrument; and characteristic data of the product comprising a plurality of future financial flows associated with the product, the plurality of future financial flows defined using at least one numerical equation;

receiving at the computing system via the first user interface contextual data of the product and characteristic data of the product, the characteristic data comprising at least one numerical equation that is employed in determining a future value of a financial flow;

displaying a second user interface on the computing system, the second user interface comprising a listing of dates and for each date a product flow defined using at least in part the at least one numerical equation;

in the system generating a planned schedule from the data that identify and describe the product, the planned schedule comprising for each of a plurality of future dates a financial flow associated with the product and defined using at least in part the at least one numerical equation;

in the system, **storing in a first table information identifying the plurality of future dates and for each of the plurality of future dates at least one of a financial event or financial flow relating to the product**;

in the system interpreting the schedule, in order to identify:

variables for the product on the basis of at least one of the plurality of future financial flows, and

for each date of the planned schedule, a function for calculating a price associated with the product as a function of at least one of the product variables;

in the system, **storing in a second table information identifying for each date of the planned schedule, the function for calculating a price associated with the product**;

in the system, **storing in a third table information identifying the variables for the product**;

in the system receiving market variables associated with the product and generated by a market analysis, the market variables identified for each of the plurality of dates on the schedule;

in the system, **storing in a fourth table the market variables associated with the product and generated by a market analysis**;

in the system calculating using the market variables, for each of a plurality of market scenarios and for each of the plurality of dates on the schedule, product variable values; in the system, **storing in a fifth table the product variable values;** and in the system calculating a product price as a function of the calculated product variable values.

Because the references do not disclose or suggest this additional claim language, claim 17 defines over the cited references for at least this additional reason.

Reconsideration and withdrawal of the rejection under 35 U.S.C. § 103(a) is respectfully requested.

***Conclusion***

Applicant respectfully submits that the present application is in condition for allowance. Early notification to this effect is requested.

If Examiner Niquette should have any questions regarding this response, the Examiner is invited to contact the undersigned attorney at (215) 568-3100.

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